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**Engell**

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(54) **SHOWER CADDIES WITH ADJUSTABLE BASKETS**

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(60) Provisional application No. 62/371,985, filed on Aug. 8, 2016, provisional application No. 62/288,711, filed on Jan. 29, 2016.

(51) **Int. Cl.**

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| ***A47K 3/28*** | (2006.01) |
| ***A47B 55/02*** | (2006.01) |
| ***A47B 57/26*** | (2006.01) |
| ***A47K 5/04*** | (2006.01) |
| *D06F 57/12* | (2006.01) |

(52) **U.S. Cl.**

CPC ..... ***A47K 3/281*** (2013.01); ***A47B 55/02*** (2013.01); ***A47B 57/26*** (2013.01); ***A47K 5/04*** (2013.01); *D06F 57/12* (2013.01)

(58) **Field of Classification Search**

CPC ..... A47B 55/02; A47B 57/26; A47K 3/281; A47K 5/04; A47K 2201/02; A47K 3/28; D06F 57/12; A47G 29/08; A47G 29/087

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See application file for complete search history.

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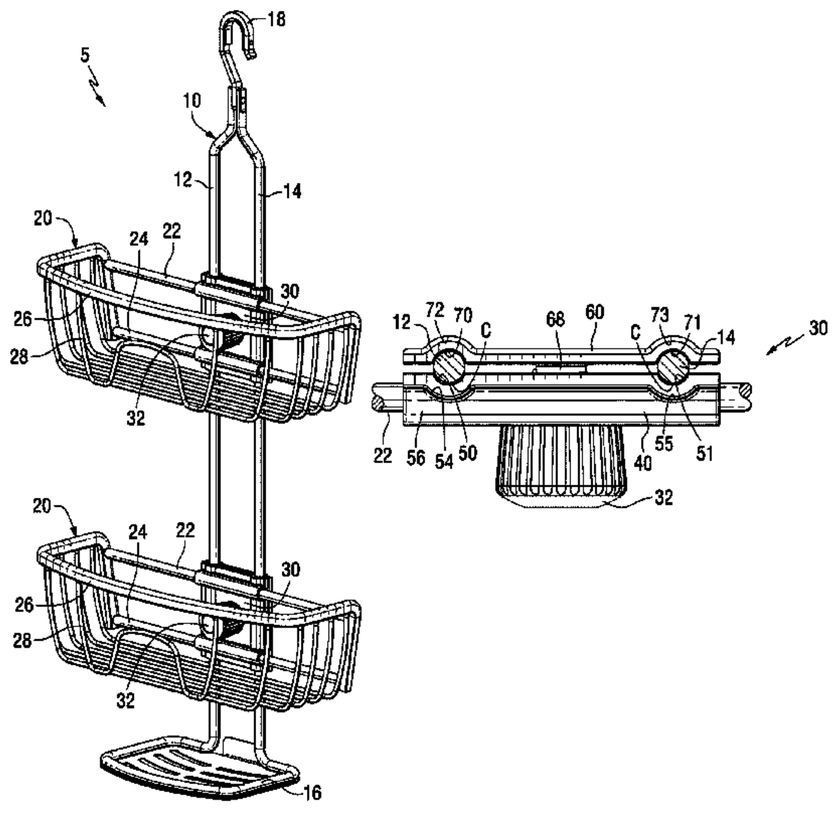
(57) **ABSTRACT**

Shower caddies with vertically and horizontally movable baskets are disclosed. Each basket is independently adjustable by a mechanism including a front plate, a rear plate and a draw fastener, which allows the user to adjust both the vertical and horizontal position of the basket from a single control point for simple and easy operation. The shower caddies may also include a tilt-resisting locking mechanism that resists rotation of the caddies when supporting an uneven load.

**20 Claims, 8 Drawing Sheets**



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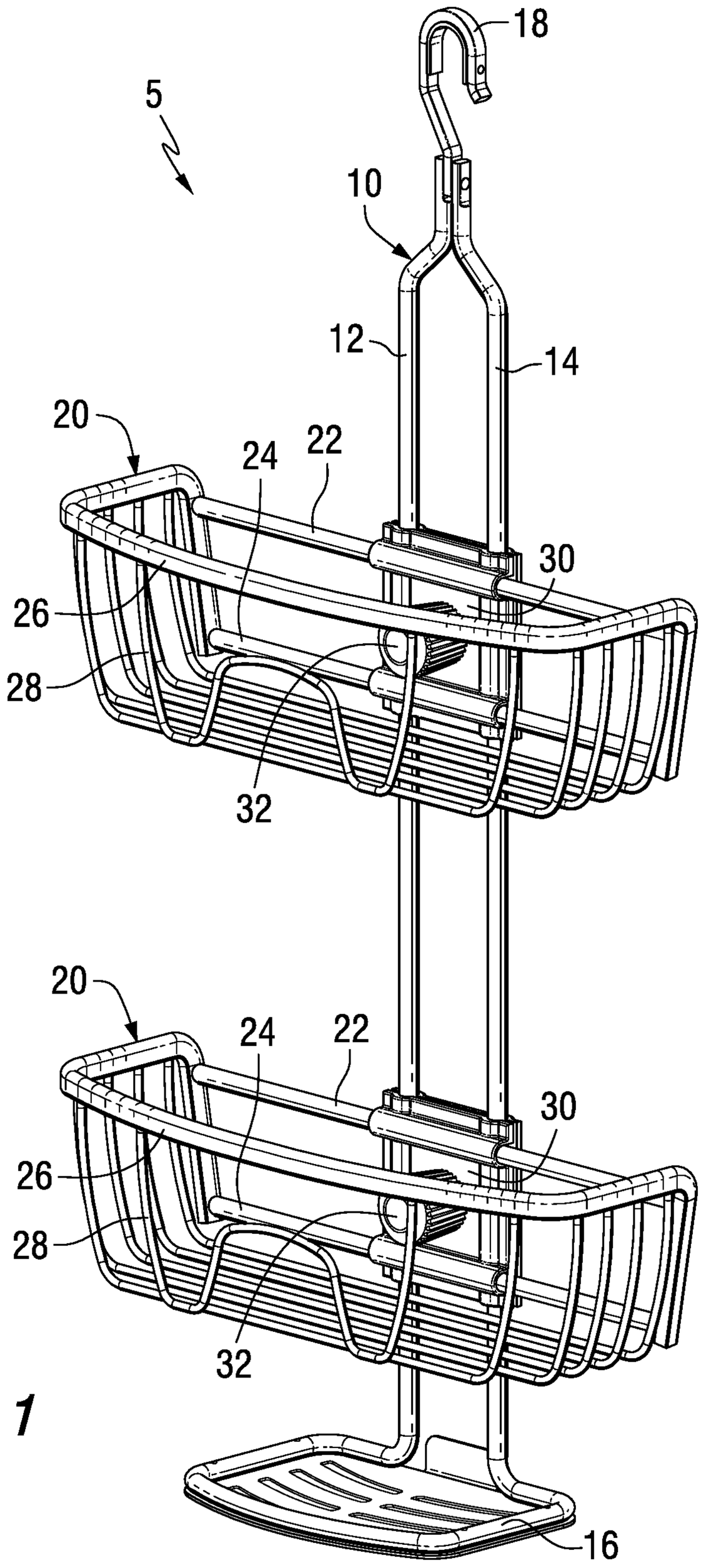
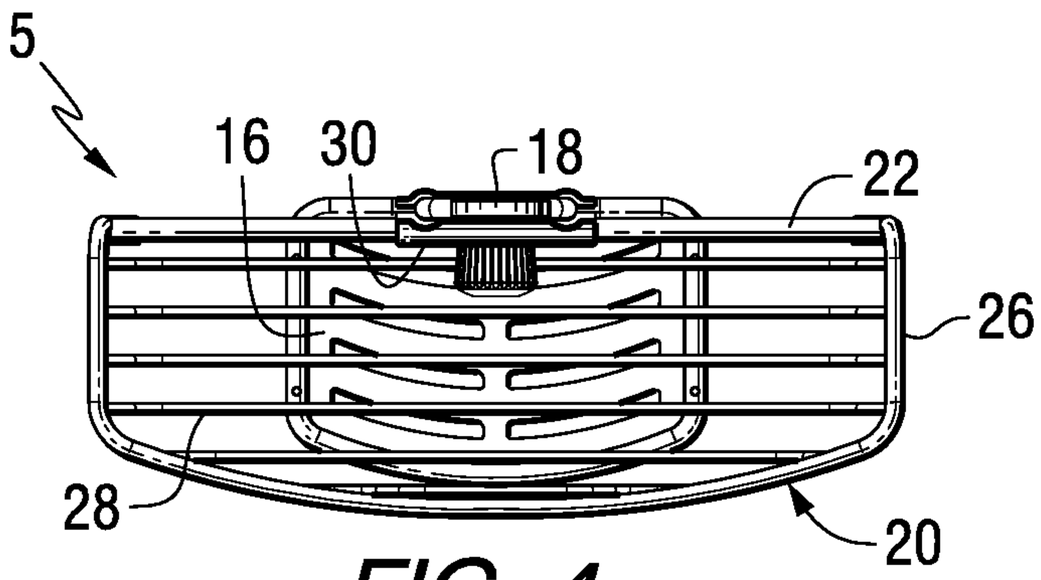



FIG. 1

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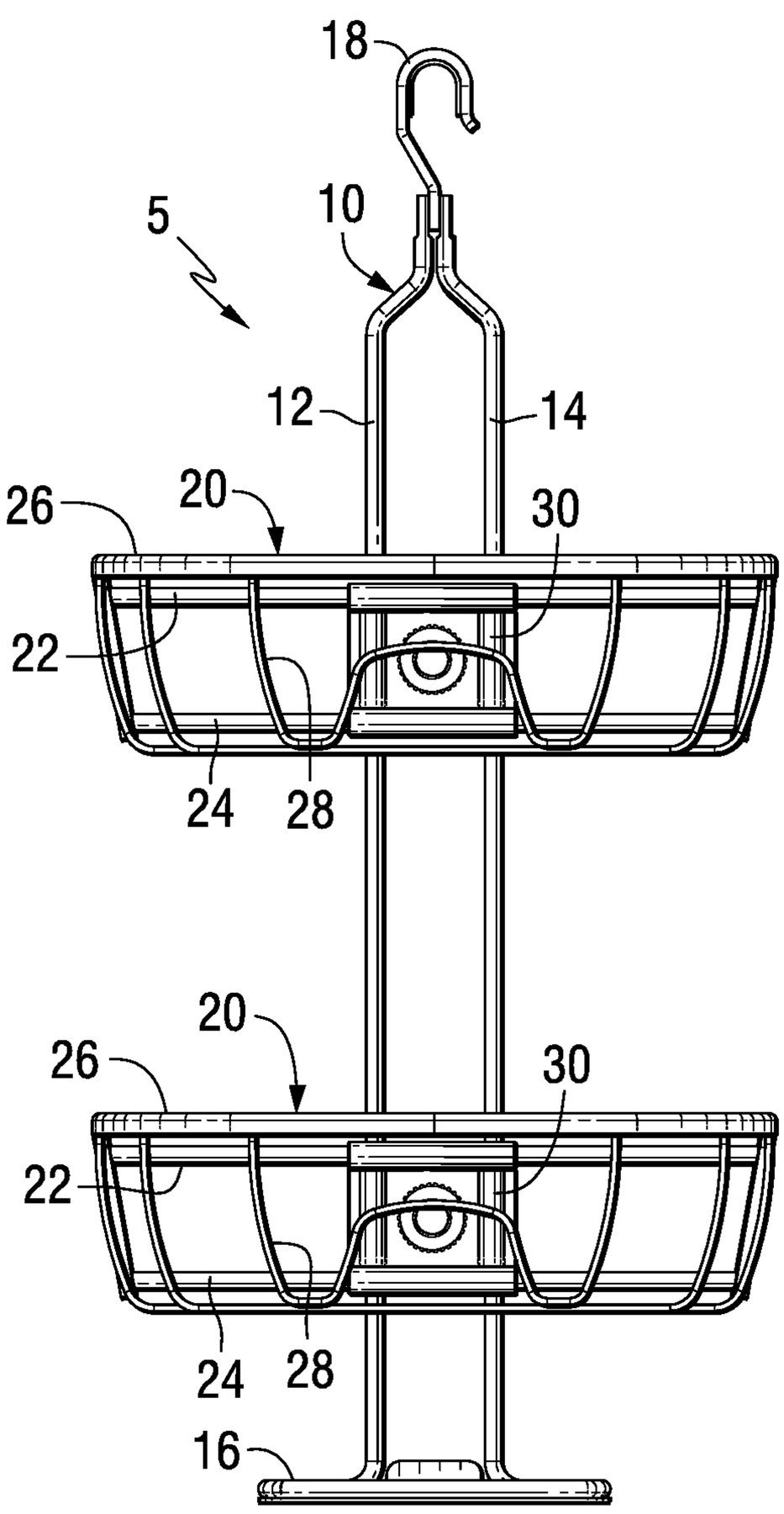


FIG. 2

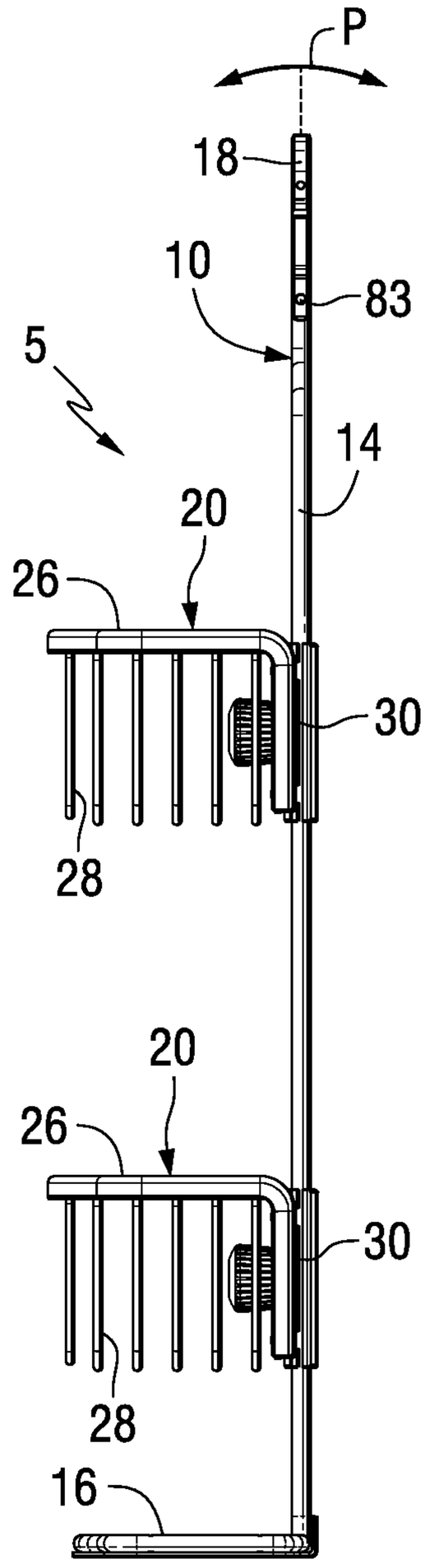


FIG. 3

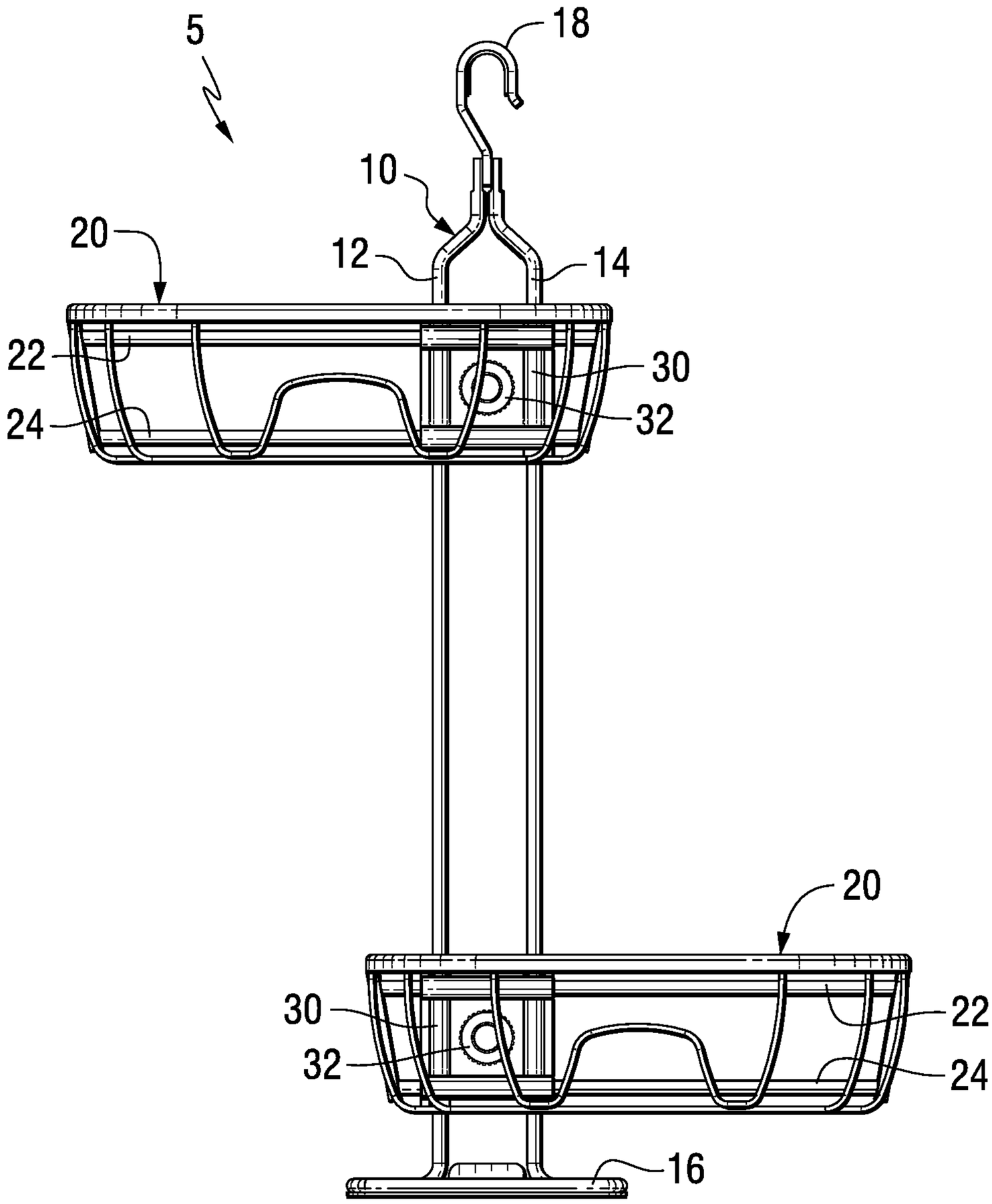


FIG. 5

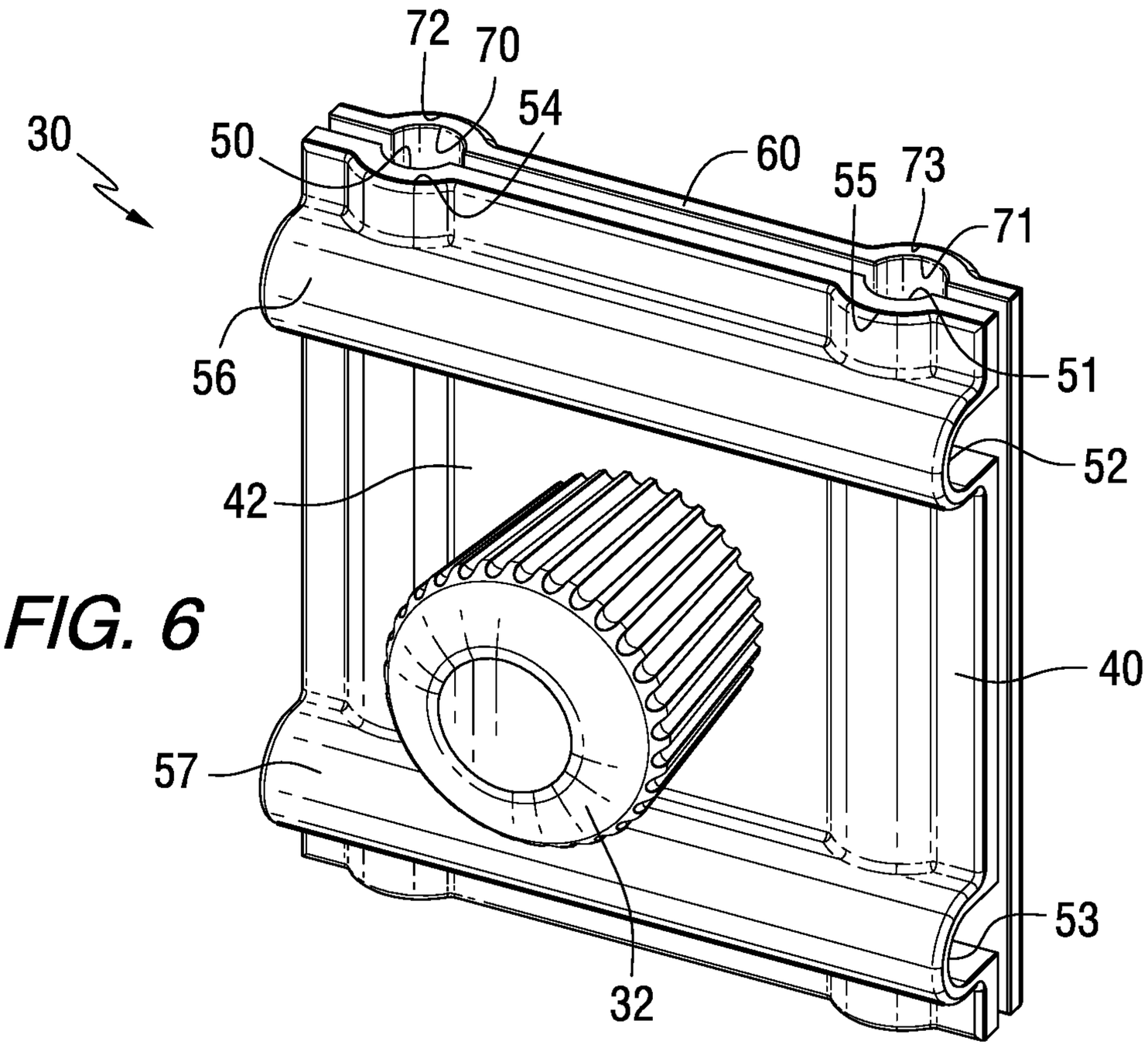
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FIG. 6

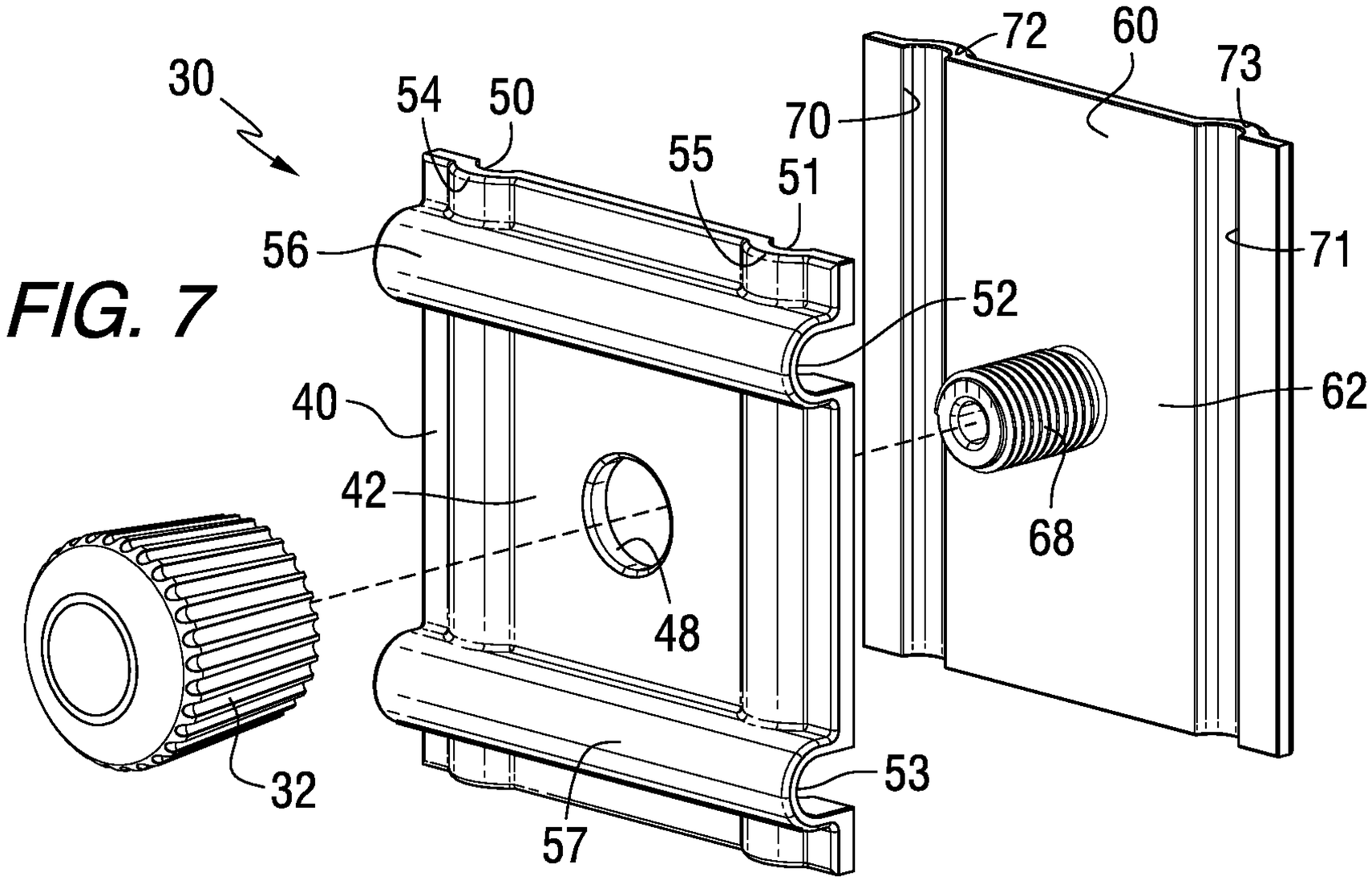
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FIG. 7

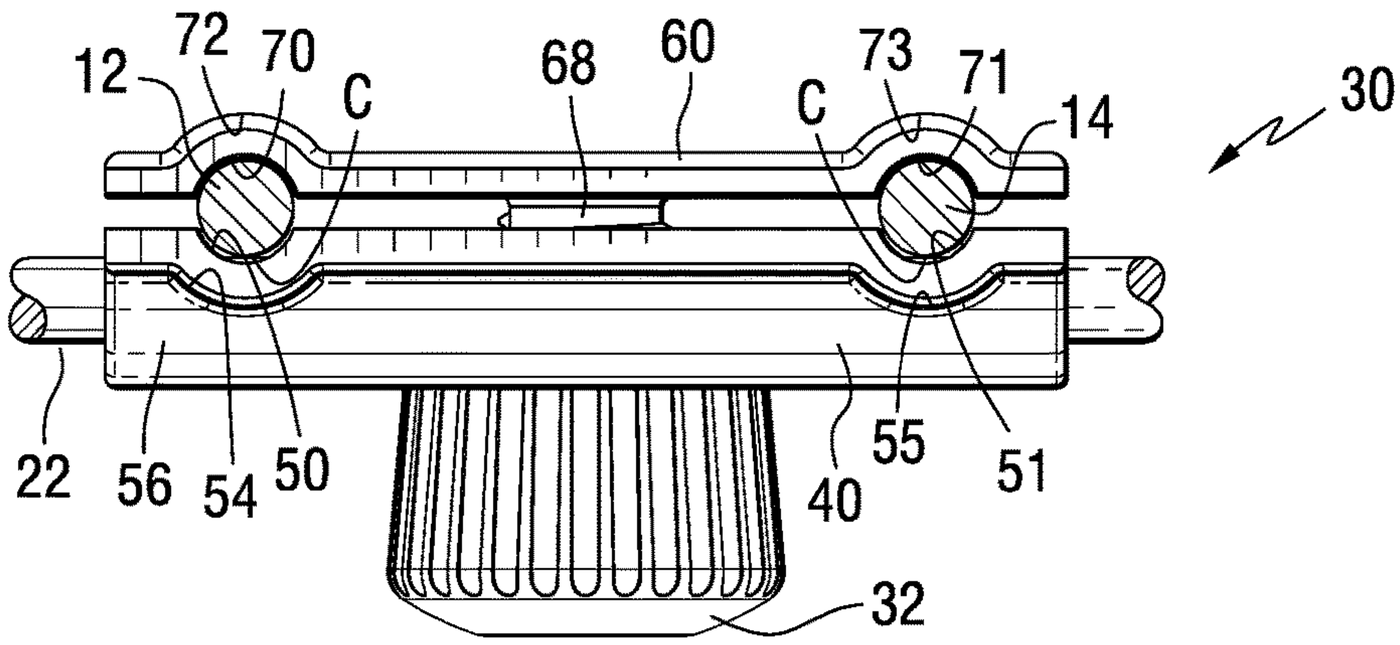



FIG. 10

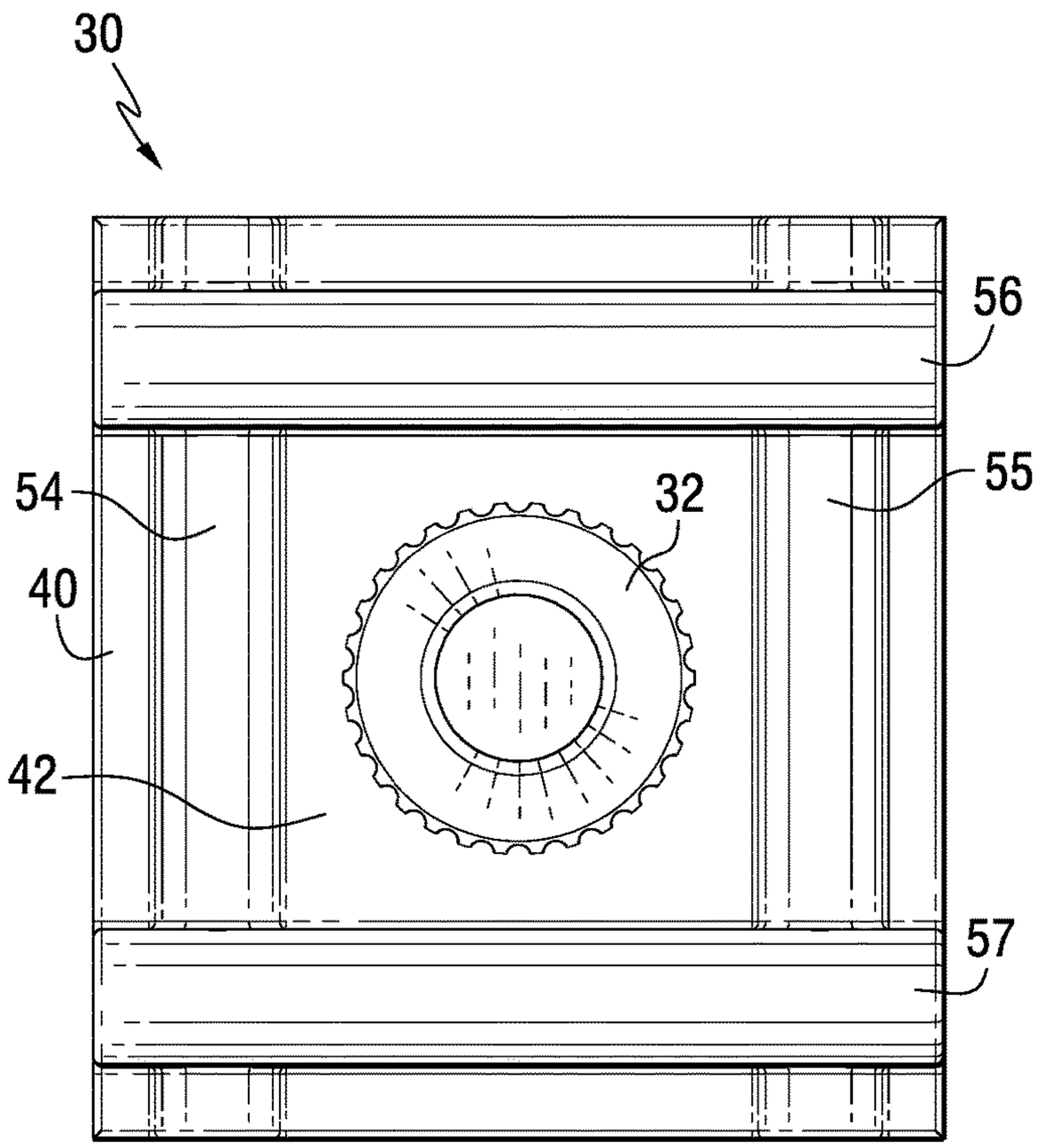



FIG. 8

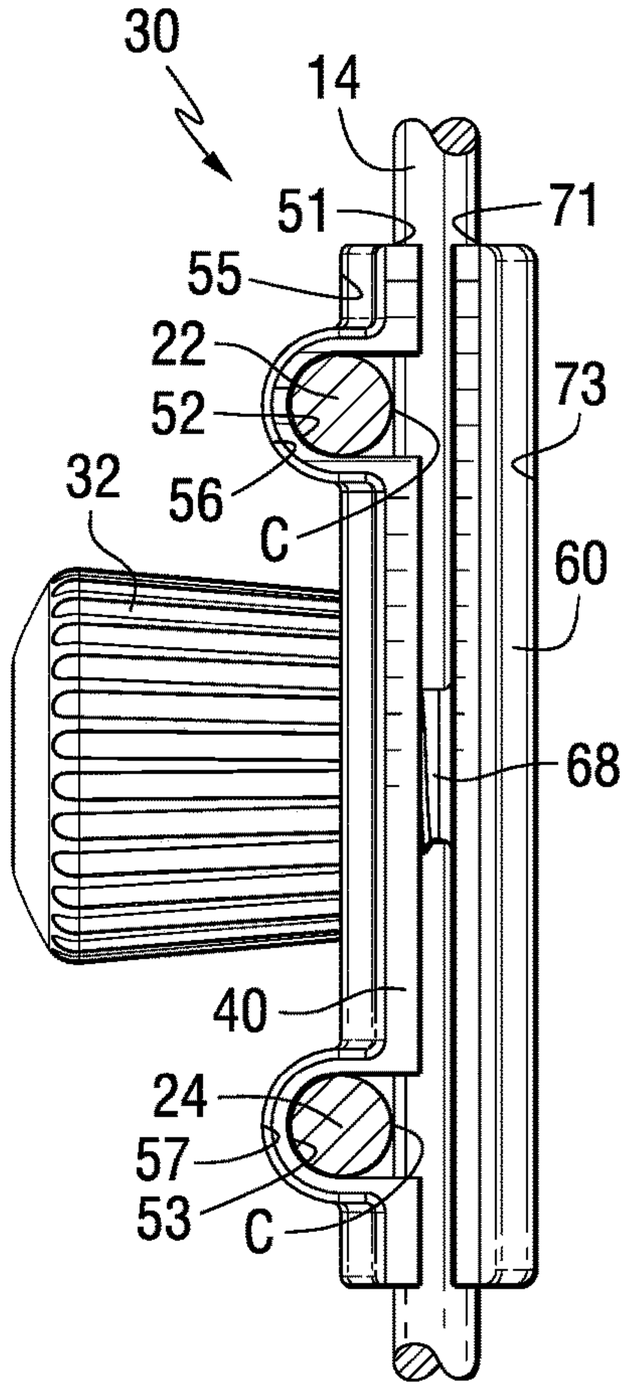



FIG. 9

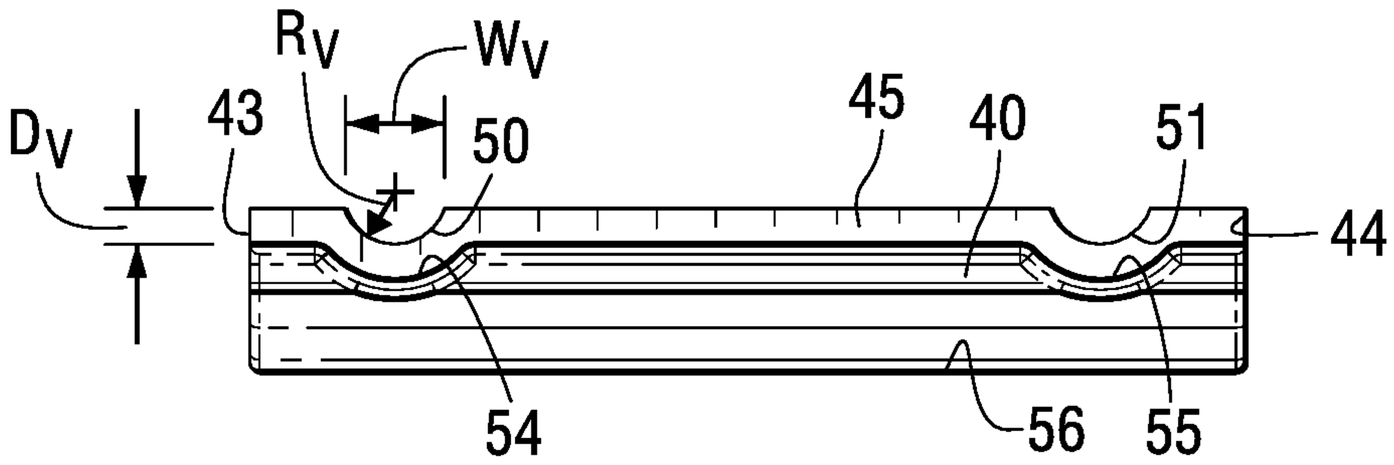
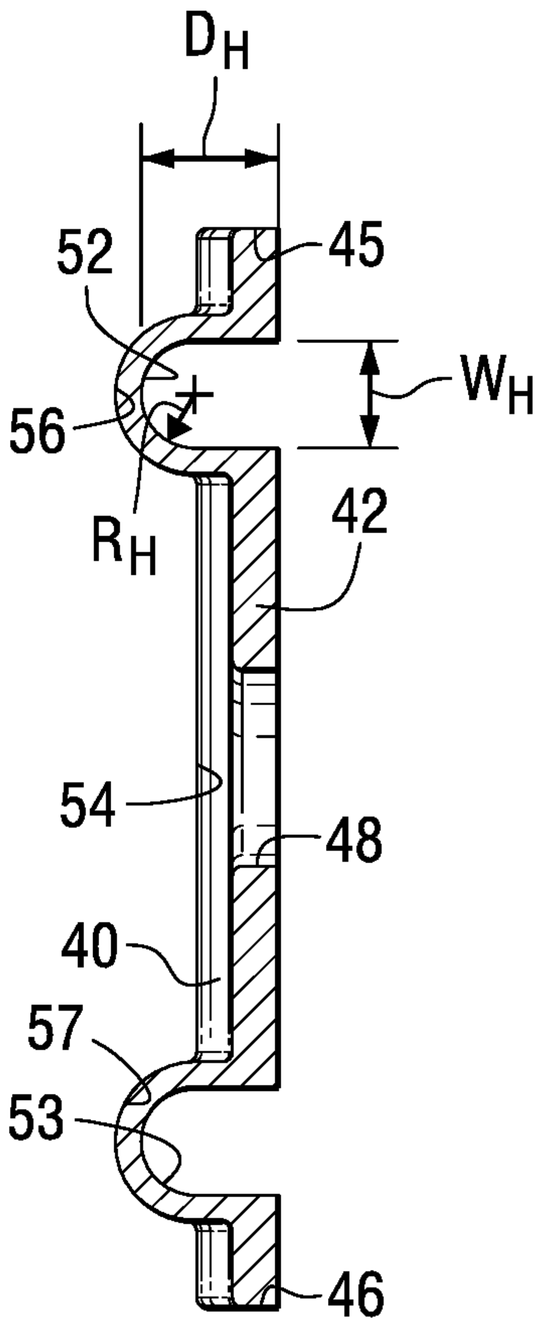



FIG. 13

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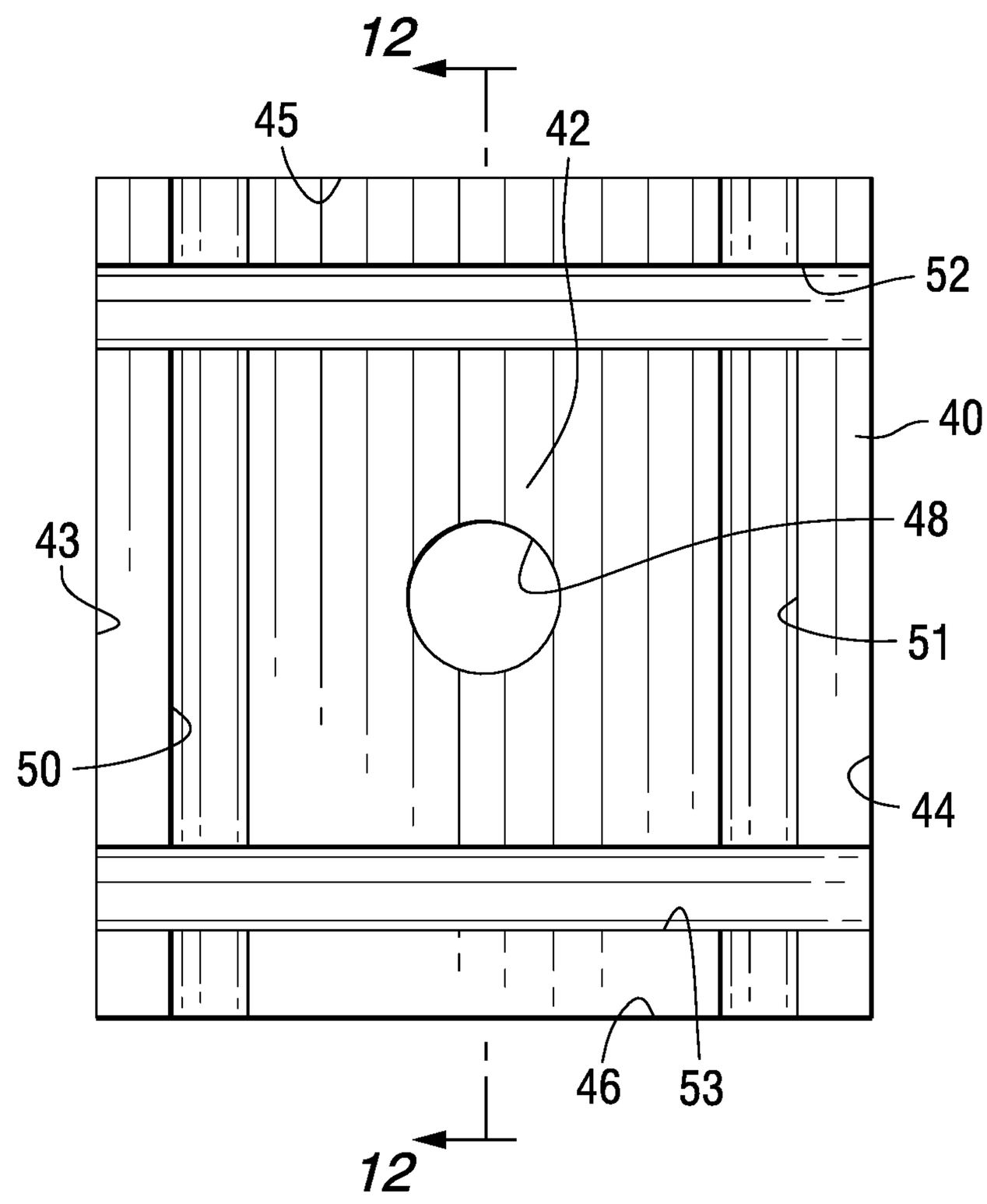


FIG. 11

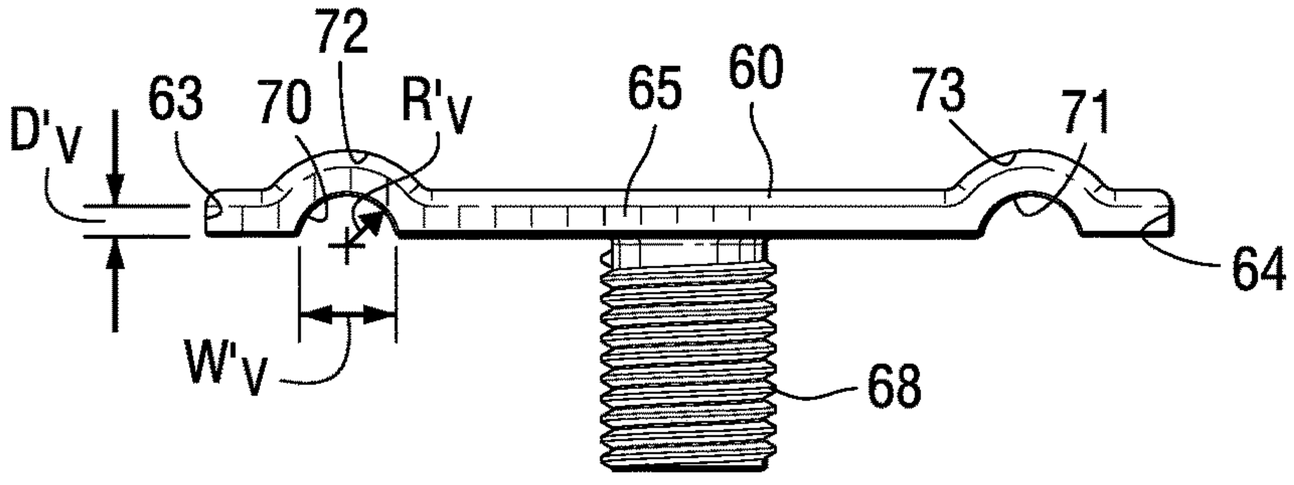


FIG. 16

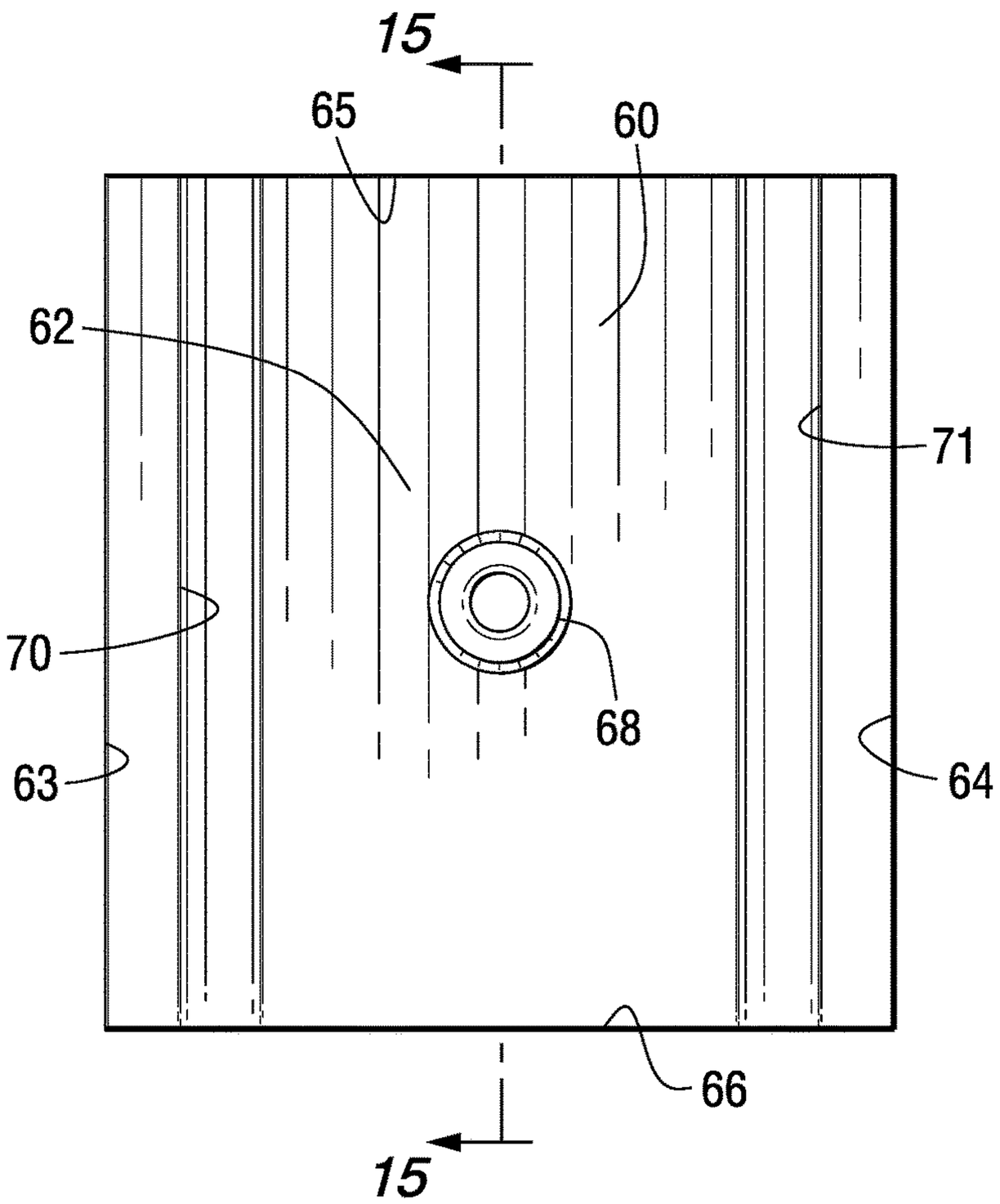


FIG. 14

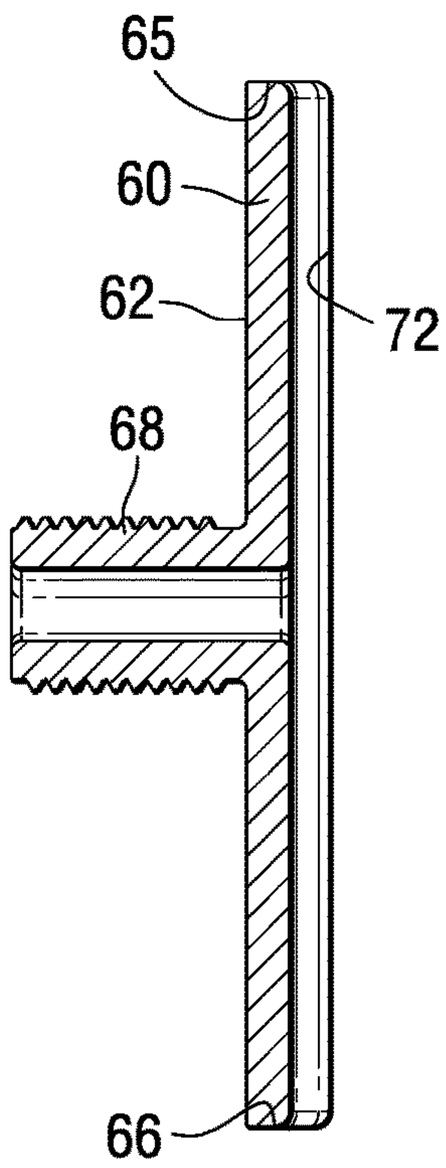


FIG. 15

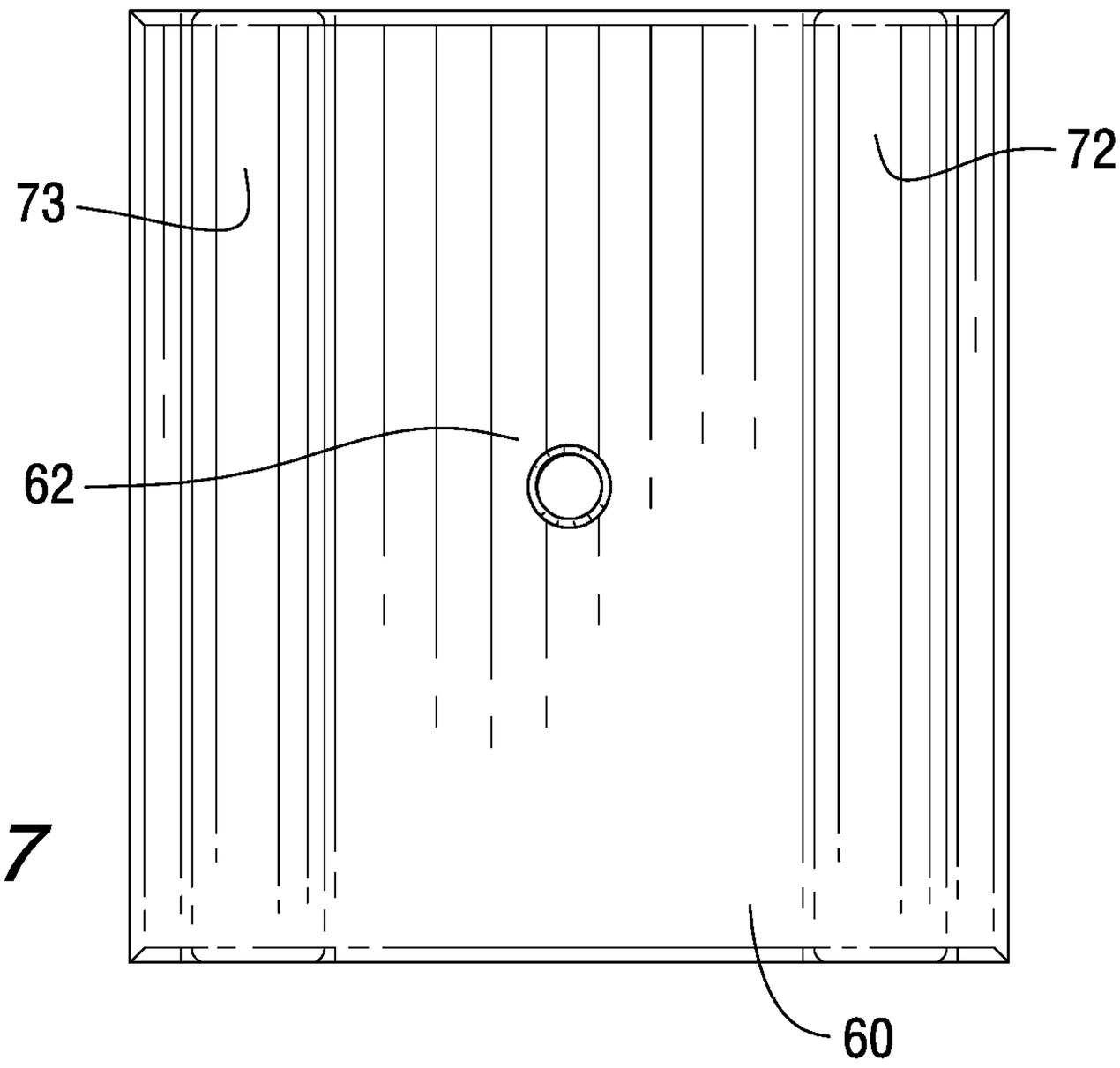


FIG. 17

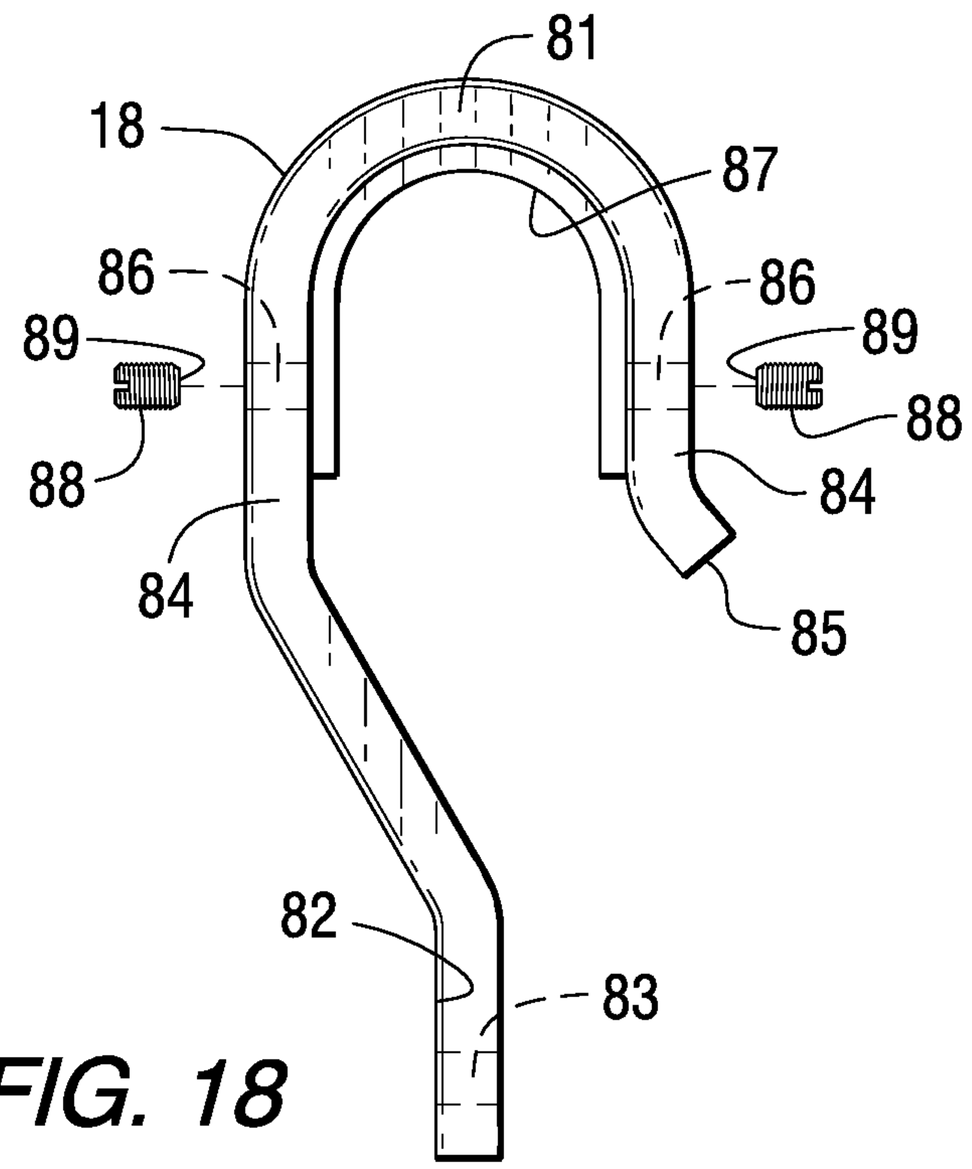


FIG. 18

# SHOWER CADDIES WITH ADJUSTABLE BASKETS

## CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 15/417,478 filed Jan. 27, 2017, which claims the benefit of U.S. Provisional Patent Application Ser. No. 62/288,711 filed Jan. 29, 2016 and U.S. Provisional Patent Application Ser. No. 62/371,985 filed Aug. 8, 2016, which are incorporated herein by reference.

## FIELD OF THE INVENTION

The present invention relates to shower caddies, and more particularly relates to shower caddies having adjustable baskets.

## BACKGROUND INFORMATION

Conventional shower caddies include baskets arranged vertically on a support member extending downward from an upper hook that engages a shower pipe. The baskets are typically rigidly mounted on the support member. This arrangement often precludes the storage of larger containers of shower and bath products.

An additional disadvantage of conventional shower caddies is that they tilt due to the weight of items that are placed on or removed from the caddies. Some shower caddies use rubber grips or suction cups at their bottoms to help control the tilting, but if the objects placed in the baskets are sufficiently heavy they may still tilt.

## SUMMARY OF THE INVENTION

The present invention provides shower caddies with vertically and horizontally movable baskets. Each basket is independently adjustable by a mechanism including a front plate, a rear plate and a draw fastener, which allows the user to adjust both the vertical and horizontal position of the basket from a single control point for simple and easy operation. The shower caddies may also include a tilt-resisting locking mechanism that resists rotation of the caddies when supporting an uneven load.

An aspect of the present invention is to provide a shower caddy assembly comprising a vertical support structure comprising a first and a second vertical support rod, at least one basket coupled to the vertical support structure, and an adjustment mechanism comprising a front plate having an upper distal edge, a rear plate having an upper distal edge, and a draw fastener, wherein the upper distal edge of the front plate is spaced from the upper distal edge of the rear plate when the first and second support rods are clamped between the front and rear plates.

This and other aspects of the present invention will be more apparent from the following description.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an isometric view of a shower caddy assembly including adjustment mechanisms in accordance with an embodiment of the present invention.

FIG. **2** is a front view of the shower caddy of FIG. **1**.

FIG. **3** is a side view of the shower caddy of FIG. **1**.

FIG. **4** is a top view of the shower caddy of FIG. **1**.



FIG. **5** is a front view of the shower caddy of FIG. **1**, showing the baskets adjusted to different horizontal and vertical positions using the adjustment mechanisms in accordance with an embodiment of the present invention.

FIG. **6** is an isometric view of an adjustment mechanism in accordance with an embodiment of the present invention.

FIG. **7** is an exploded isometric view of the adjustment mechanism of FIG. **6**.

FIG. **8** is a front view of the adjustment mechanism of FIG. **6**.

FIG. **9** is a side view of the adjustment mechanism of FIG. **6**.

FIG. **10** is a top view of the adjustment mechanism of FIG. **6**.

FIG. **11** is a front view of the front plate of the adjustment mechanism in accordance with an embodiment of the present invention.

FIG. **12** is a side sectional view of the front plate taken through line **12-12** of FIG. **11**.

FIG. **13** is a top view of the front plate of FIG. **11**.

FIG. **14** is a front view of the back plate of the adjustment mechanism in accordance with an embodiment of the present invention.

FIG. **15** is a sectional view of the back plate taken through line **16-16** of FIG. **15**.

FIG. **16** is a top view of the back plate of FIG. **14**.

FIG. **17** is a back view of the back plate of FIG. **14**.

FIG. **18** is a front view of a tilt-resisting support hook in accordance with an embodiment of the present invention.

## DETAILED DESCRIPTION

FIG. **1** illustrates a shower caddy assembly **5** in accordance with an embodiment of the present invention. The shower caddy assembly **5** includes a vertical support structure **10** comprising a first vertical support rod **12**, a second vertical support rod **14** parallel with the first vertical support rod **12**, and a bottom shelf **16**. The vertical support structure **10** may be mounted on a shower pipe connected to a shower head (not shown) by a tilt-resisting support hook **18**, which is described in more detail below. In the embodiment shown, the shower caddy assembly **5** includes two baskets **20** mounted on the vertical support structure **10** by an adjustment mechanism **30**. The baskets **20** are configured to hold a variety of bathing accessories. While two baskets **20** of similar size are shown in this embodiment, any other suitable number of baskets **20** may be used. For example, one, three, four or more baskets may be mounted on the vertical support structure **10**. In addition, the baskets may vary in size, for example, the top basket may be smaller than the bottom basket.

As shown in FIGS. **1-4**, each basket **20** includes an upper horizontal basket support rod **22**, a lower horizontal basket support rod **24**, a retaining rod **26** and retaining wire **28**. In the embodiment shown, each basket **20** comprises two horizontal basket support rods, however, it is to be understood that any other suitable number of horizontal basket support rods may be used, e.g., one, two, three or more horizontal basket support rods. For example, a basket **20** with a single horizontal support rod at the upper edge of the basket **20** may be used. The upper and lower horizontal basket support rods **22** and **24** are located at the rear of each basket **20**, are parallel with each other, and are vertically offset from each other. In the embodiment shown, the retaining rod **26** is connected to the upper and lower horizontal basket support rods **22** and **24** and forms the upper front and side portions of the basket **20**. The retaining wire

28 is connected to the retaining rod 26 and forms the bottom of the basket 20. In accordance with another embodiment, the upper and/or lower horizontal basket support rods 22 and 24 may be extended along the side and front portions of the basket 20 thereby providing an integral structure in place of the retaining rod 26. In the embodiment shown, the retaining wire 28 is connected to the upper and lower horizontal basket support rods 22 and 24 to form the bottom of the basket 20 and to provide a rigid basket. While particular basket arrangements are described herein, it is to be understood that any other suitable basket structures may be used in accordance with the present invention.

In the embodiment shown, the bottom shelf 16 is formed by an extension of the first and second vertical support rods 12 and 14 which form the perimeter of the bottom shelf 16. In another embodiment, the bottom shelf 16 may be mounted on the vertical support structure 10 by an adjustment mechanism similar to the mechanism 30 used with the baskets 20. The bottom shelf 16 may be configured as a soap dish having a bottom formed by an insert placed into a central opening formed by the first and second vertical support rods. However, any other suitable arrangement of the bottom shelf 16 may be used. For example, the bottom shelf 16 may comprise a wire bottom, hooks or the like, or the bottom shelf may be eliminated.

In accordance with embodiments of the present invention, the adjustment mechanism 30 includes a draw fastener 32 for selectively positioning the basket(s) 20 at desired locations. As shown by comparing FIGS. 2 and 5, each adjustment mechanism 30 of the shower caddy assembly 5 allows its respective basket 20 to be adjustably positioned at different horizontal positions, and at different vertical positions, in relation to the vertical support structure 10. When the shower caddy assembly 5 is mounted on a shower pipe (not shown), the first and second vertical support rods 12 and 14 of the vertical support structure remain stationary, while the adjustment mechanism 30 allows the baskets 20 to move both vertically up and down, and horizontally left and right. The ability of the baskets 20 to move both vertically and horizontally allows the shower caddy assembly 5 to easily accommodate containers and other bath items and accessories of varying sizes. As more fully described below, the provision of an adjustment mechanism 30 with a single draw fastener 32 allows for easy manipulation both horizontally and vertically of each basket 20 with a simple loosening and tightening of the draw fastener 32. The simple manipulation of the draw fastener 32 for each basket 20 can be performed at a single central location.

As shown in FIGS. 6-8, the adjustment mechanism 30 comprises a generally planar front plate 40, a generally planar back plate 60, and the draw fastener 32. When the shower caddy assembly 5 is installed, the front and back plates 40 and 60 are aligned in parallel vertical planes that are offset from each other. The front plate 40 is horizontally moveable from the back plate 60 in a direction normal to planes of the plates 40 and 60. The draw fastener 32 may be tightened to draw the front plate 40 toward the back plate 60 to secure the front and back plates against vertical movements with respect to the vertical support rods 12 and 14. The draw fastener 32 also secures each basket 20 against horizontal movement. In the embodiment shown, the draw fastener 32 comprises an internally threaded adjustment knob that may be threadingly engaged with a threaded stud 68 extending from the back plate, however, any other suitable hand manipulatable mechanism may be used. The draw fastener 32 may be rotated to increase the spacing between the plates 40 and 60 in order to allow sliding movement of the vertical support rods 12 and 14 within the adjustment mechanism 30, and to allow sliding movement of the horizontal basket support rods 22 and 24 within the adjustment mechanism 30. The draw fastener 32 of the adjustment mechanism 30 may thus provide a central control point for simple and easy operation.

The adjustment mechanisms 30 may be made of any suitable materials, including plastic, metals, or the like. For example, the front plate 30, back plate 60 and draw fastener 32 may be made of plastics such as polyethylene, polypropylene or polyvinyl chloride that are sufficiently rigid but slightly flexible to allow a desired amount of deflection when the draw fastener 32 is tightened to draw the front and back plates 40 and 60 together.

As shown in FIGS. 6-8 and 11, the front plate 40 includes a planar central region 42, left edge 43, right edge 44, top edge 45, bottom edge 46, and center opening 48. In the embodiment shown, the center opening 48 is located in the center of the planar central region 42 of the front plate. In the embodiment shown, a generally square front plate 40 having four straight edges is shown. However, any other suitable shape of front plate may be used, e.g., rectangular, circular, ovular, triangular, a shape having two straight edges and two curved edges, or the like.

In accordance with an embodiment of the present invention, the front plate 40 includes first and second vertical support rod receiving guide channels 50 and 51 recessed in a direction perpendicular to the planar surface of the front plate 40, as shown most clearly in FIGS. 11 and 13. Each of the vertical guide channels 50 and 51 has a vertical support rod slidably disposed therein, as shown in FIGS. 9 and 10. The front plate 40 also includes first and second horizontal rod receiving guide channels 52 and 53 recessed in a direction perpendicular to the planar surface of the front plate 40, as shown most clearly in FIGS. 11 and 12. Each of the horizontal guide channels 52 and 53 has a horizontal basket rod slidably disposed therein, as shown in FIGS. 9 and 10. For example, the first horizontal guide channel 52 may slidably receive the upper horizontal basket support rod 22 and the second horizontal guide channel 53 may slidably receive the lower horizontal basket support rod 24. In the embodiment shown, the front plate 40 comprises two horizontal guide channels, but any other suitable number of horizontal guide channels may be used, e.g., zero, one, three or more.

As shown in FIGS. 6-10, 12 and 13, the vertical guide channels 50 and 51 of the front plate 40 form vertical raised regions 54 and 55 on the front surface of the front plate 40. The horizontal guide channels 52 and 53 of the front panel 40 form horizontal raised regions 56 and 57 on the front surface. The vertical raised regions 54 and 55 and horizontal raised regions 56 and 57 thus extend forward from the planar front plate 40. In accordance with an embodiment of the present invention, the planar central region 42 is located in an interior region between the vertical raised regions 54 and 55 and horizontal raised regions 56 and 57.

As shown in FIGS. 3, 7 and 14-17, the back plate 60 includes a planar central region 62, left edge 63, right edge 64, top edge 65, bottom edge 66, and threaded stud 68. The threaded stud 68 may extend from the center of the planar central region 62 of the back plate, and is substantially aligned with the center opening 48 of the front plate 40. In accordance with an embodiment of the present invention, the internally threaded adjustment knob 32 is threadingly engaged with the threaded stud 68. In the embodiment shown, a generally square back plate 60 having four straight edges is shown. However, any other suitable shape of back

plate may be used, e.g., rectangular, circular, ovular, triangular, a shape having two straight edges and two curved edges, or the like.

In accordance with an embodiment of the present invention, the back plate **60** includes first and second vertical support rod receiving guide channels **70** and **71** recessed in a direction perpendicular to the planar surface of the back plate **60**, as shown most clearly in FIGS. **14** and **16**. Each of the vertical guide channels **70** and **71** has a vertical support rod slidably disposed therein, as shown in FIGS. **9** and **10**.

As shown in FIGS. **6-10** and **15-17**, the vertical guide channels **70** and **71** form vertical raised regions **72** and **73** on the back surface of the back plate **60**. The vertical raised regions **72** and **73** thus extend backward from the planar back plate **60**. In accordance with an embodiment of the present invention, the planar central region **62** is located in an interior region between the vertical raised regions **72** and **73**.

The vertical support structure **10** and baskets **20** may be made of any suitable materials, including corrosion resistant metals such as aluminum and/or stainless steel, plastic or the like. Any suitable gauge of wire may be used for the rods of the vertical support structure **10** and baskets **20**. In accordance with an embodiment of the present invention, the first and second vertical support rods **12** and **14** and the upper and lower horizontal basket support rods **22** and **24** may have a circular cross-section having a diameter. For example, the diameter of the first and second vertical support rods **12** and **14** and the upper and lower horizontal basket support rods **22** and **24** may range from 0.05 to 0.6 inch, or from 0.1 to 0.5 inch or from 0.15 to 0.4 inch. However, any other suitable shape and size of first and second vertical support rods **12** and **14** and upper and lower horizontal basket support rods **22** and **24** may be used, e.g., square, rectangular, ovular, hexagonal or the like. Although the first and second vertical support rods **12** and **14** and the upper and lower horizontal basket support rods **22** and **24** shown in FIGS. **1-5** have similar diameters, it is to be understood that any other suitable sizes may be used, e.g., the first and second vertical support rods **12** and **14** may have different diameters compared with upper and lower horizontal basket support rods **22** and **24**, the upper and lower horizontal basket support rods **22** and **24** may have different diameters, etc.

As shown in FIGS. **9** and **10**, when the draw fastener **32** is tightened to draw the front plate **40** toward the back plate **60**, the horizontal basket support rods **22** and **24** are brought into contact with vertical support rods **12** and **14** forming contact points C. In the embodiment shown, the contact points C may be formed at four separate points of the adjustment mechanism **30**, however, any other suitable number contact points C may be formed, e.g., zero, one, two, three or more. The contact points C between the horizontal basket support rods **22** and **24** and the vertical support rods **12** and **14** provide direct engagements between the rods which help secure the adjustment mechanism **30** against vertical movements from their selected vertical position with respect to the vertical support rods **12** and **14** even when the baskets **20** are heavily loaded. The contact points C also help secure each basket **20** against horizontal movement. For example, tightening of the draw fastener **32** causes the vertical guide channels **50** and **51** of the front plate **40** to press against the vertical support rods **12** and **14** and forces them toward the back plate **60**. This arrangement also forces the vertical support rods **12** and **14** to press into the vertical guide channels **70** and **71** of the back plate **60**. Once the vertical support rods **12** and **14** are pressed into the vertical guide channels **70** and **71** of the back plate **60**, additional tightening of the draw fastener **32** may form or increase the pressure at the contact points C between the horizontal basket support rods **22** and **24** and the vertical support rods **12** and **14**. In the embodiment shown, the contact points C result in each vertical support rod directly contacting each horizontal basket support rod. This allows the horizontal basket support rods **22** and **24** and vertical support rods **12** and **14** to be engaged at four contact points C.

In accordance with an embodiment of the present invention, the draw fastener **32** exerts a central draw force on the planar central region **42** of the front plate **40** and the planar central region **62** of the back plate **60**. The draw force on the front surface of the planar central region **42** of the front plate **40** presses the planar central region **42** toward the planar central region **62** of the back plate. The draw force may also deflect the planar central region **62** and the planar central region **42** toward each other due to the slightly flexible nature of the front and back plates **40** and **60**. As shown in FIGS. **8-10**, the draw force is applied by the draw fastener **32** in a central region between the four contact points C, which are equally spaced from the centrally applied draw force. This equal spacing results in a substantially equal amount of force being applied to each contact point C. In accordance with an embodiment of the present invention, the resilient nature of the front plate **40** and back plate **60** may help to provide the substantially equal amount of force to each contact point C. Although, the draw fastener **32** of the adjustment mechanism **30** shown in FIGS. **8-10** provides a draw force in a central region between the four contact points C, it is to be understood that the draw force may be provided at any other suitable location, e.g., at a location that is not equally spaced from the contact points C.

As shown in FIG. **12**, the horizontal guide channels **52** and **53** have a depth $D_H$ and a width $W_H$ selected to allow the horizontal basket support rods **22** and **24** to be totally contained in the horizontal guide channels **52** and **53**. For example, the depth $D_H$ of the horizontal guide channels **52** and **53** measured in a direction perpendicular to a planar surface of the front plate **40** may range from 0.1 to 0.8 inch, or from 0.15 to 0.6 inch or from 0.2 to 0.5 inch. In certain embodiments, the depth $D_H$ of the horizontal guide channels **52** and **53** is greater than the diameter of the horizontal basket support rods **22** and **24**. For example, the depth $D_H$ of the first and second horizontal guide channels may be from 5 to 100 percent greater, for example, from 10 to 80 percent greater, or from 15 to 50 percent greater than the diameter of the horizontal basket support rods **22** and **24**. In certain embodiments, the width $W_H$ of the horizontal guide channels **52** and **53** may typically range from 0.05 to 0.7 inch, for example, from 0.1 to 0.6 inch, or from 0.15 to 0.5 inch. The width $W_H$ may be equal to or slightly greater than the diameter of the horizontal basket support rods **22** and **24**.

As shown in FIG. **12**, the horizontal guide channels **52** and **53** have a radius $R_H$ that is selected to allow the horizontal basket support rods **22** and **24** to be totally inserted and contained in the horizontal guide channels **52** and **53**. For example, the radius $R_H$ of the horizontal guide channels **52** and **53** may range from 0.025 to 0.4 inch, or from 0.05 to 0.3 inch or from 0.1 to 0.25 inch. In accordance with an embodiment of the present invention, the depth $D_H$, width $W_H$ and radius $R_H$ of the horizontal guide channels **52** and **53** may be varied depending on the diameter, size and shape of the horizontal basket support rods **22** and **24**. As shown in FIG. **12**, the upper and lower horizontal guide channels **52** and **53** may have identical depths $D_H$, widths $W_H$ and/or radiuses $R_H$, or they may be different.

As shown in FIG. **13**, the vertical guide channels **50** and **51** of the front plate **40** have a depth $D_V$ and a width $W_V$ selected to allow the vertical support rods **12** and **14** to be partially contained in the vertical guide channels **50** and **51**. For example, the depth $D_V$ of the vertical guide channels **50** and **51** measured in a direction perpendicular to a planar surface of the front plate **40** may range from 0.01 to 0.5 inch, or from 0.03 to 0.3 inch or from 0.05 to 0.2 inch. In certain embodiments, the width $W_V$ of the vertical guide channels **50** and **51** may typically range from 0.05 to 0.6 inch, or from 0.1 to 0.5 inch or from 0.15 to 0.4 inch.

As shown in FIG. **13**, ends of the vertical guide channels **50** and **51** of the front plate **40** have a radius $R_V$ that is also selected to accommodate and receive the vertical support rods **12** and **14**. For example, the radius $R_V$ of the vertical guide channels **50** and **51** may range from 0.025 to 0.4 inch, or from 0.05 to 0.3 inch or from 0.1 to 0.25 inch. In accordance with an embodiment of the present invention, the depth $D_V$, width $W_V$ and radius $R_V$ of the vertical guide channels **50** and **51** may be varied depending on the diameter, size and shape of the vertical support rods **12** and **14**. As shown in FIG. **13**, the first and second vertical guide channels **50** and **51** of the front plate **40** may have identical depths $D_V$, widths $W_V$ and/or radiuses $R_V$, or they may be different.

As shown in FIG. **16**, the vertical guide channels **70** and **71** of the back plate **60** have a depth $D'_V$ and a width $W'_V$ selected to allow the vertical support rods **12** and **14** to be partially contained in the vertical guide channels **70** and **71**. For example, the depth $D'_V$ of the vertical guide channels **70** and **71** measured in a direction perpendicular to a planar surface of the back plate **60** may range from 0.01 to 0.5 inch, or from 0.03 to 0.3 inch or from 0.05 to 0.2. In certain embodiments, the width $W'_V$ of the vertical guide channels **70** and **71** may range from 0.05 to 0.6 inch, or from 0.1 to 0.5 inch or from 0.15 to 0.4 inch.

As shown in FIG. **16**, the ends of vertical guide channels **70** and **71** have a radius $R'_V$ that is also selected to accommodate and receive the vertical support rods **12** and **14**. For example, the radius $R'_V$ of the vertical guide channels **70** and **71** may range from 0.025 to 0.4 inch, or from 0.05 to 0.3 inch or from 0.1 to 0.25 inch. In accordance with an embodiment of the present invention, the depth $D'_V$, width $W'_V$ and radius $R'_V$ of the vertical guide channels **70** and **71** may be varied depending on the size of the vertical support rods **12** and **14**. As shown in FIG. **16**, the first and second vertical guide channels **70** and **71** of the back plate **60** may have identical depths $D'_V$, widths $W'_V$ and/or radiuses $R'_V$, or they may be different.

In accordance with an embodiment of the present invention, the first and second vertical guide channels **50** and **51** of the front plate **40** and the first and second vertical guide channels **70** and **71** of the back plate **60** form first and second opposing vertical guide channels when the adjustment mechanism **30** is assembled, as shown most clearly in FIGS. **6**, **9** and **10**. The first and second vertical guide channels **50** and **51** of the front plate **40** and the first and second vertical guide channels **70** and **71** of the back plate **60** may have corresponding depths and/or widths. For example, the depth $D_V$ of the vertical guide channels **50** and **51** of the front plate **40** may be equal to the depth $D'_V$ of the vertical guide channels **70** and **71** of the back plate **60**.

In accordance with an embodiment of the present invention, the depths $D_H$ of horizontal guide channels **52** and **53**, and the depths $D_V$ of the first and second vertical guide channels **50** and **51**, of the front plate **40** are selected to provide the contact points C, as shown in FIGS. **9** and **10**. When the adjustment mechanism **30** is tightened, the depth $D_H$ of the horizontal guide channels **52** and **53** and the depths $D_V$ and $D'_V$ of the opposing vertical guide channels **50**, **70** and **51**, **71**, are selected to allow the vertical support rods **12** and **14** and horizontal basket support rods **22** and **24** to contact each other. As shown in FIGS. **9** and **10**, when the draw fastener **32** is tightened on the threaded stud **68** to cause the contact points C between the vertical support rods **12** and **14** and the horizontal basket support rods **22** and **24**, there may be a gap between the front plate **40** and the back plate **60**. Alternatively, the contact points C may still be formed if the front plate **40** and the back plate **60** are brought into contact by the tightening of the adjustment mechanism **30**.

In the embodiment shown, the front plate **40** includes two vertical guide channels **50** and **51** and two horizontal guide channels **52** and **53**. However, it is it be understood that the front plate **40** may only include horizontal guide channels **52** and **53**, in which case, only the back plate **60** may include vertical guide channels **50** and **51**. In this alternative embodiment, the depth $D'_V$ of the vertical guide channels **70** and **71** may be altered to accommodate a greater portion of the diameter of the vertical support rods **12** and **14**. For example, the depth $D'_V$ and width $W'_V$ of the vertical guide channels **70** and **71** may be similar to the depth $D_H$ and/or width $W_H$ of the horizontal guide channels **52** and **53**, as previously described herein. In accordance with another embodiment, the front plate **40** may only include vertical guide channels, and the back plate **60** may only include both horizontal and vertical guide channels.

As shown in detail in FIG. **18**, the tilt-resisting support hook **18** comprises an upper pipe engaging portion **81** and a lower portion **82** connected to the vertical support structure **10**. In the embodiment shown, the upper pipe engaging portion **81** is generally "U"-shaped and comprises two downwardly extending side legs **84**. However, any other suitable shape of upper pipe engaging portion may be used. In the embodiment shown in FIG. **18**, one downwardly extending side leg **84** forms an open end **85**, while the other downwardly extending side leg **84** is connected to the vertical support structure **10**. The open end **85** of the upper pipe engaging portion **81** allows the tilt-resisting support hook **18** to be easily installed on shower pipes having various sizes of shower heads. While the tilt-resisting support hook **18** shown in FIG. **18** has an open end **85**, in other embodiments the downwardly extending side legs **84** may form a closed loop at the lower portion **82** and/or to the vertical support structure **10**. For example, the downwardly extending side legs **84** of the generally U-shaped upper pipe engaging portion **81** may extend downwardly to couple with the vertical support rods **12** and **14** (not shown). In this embodiment, the downwardly extending side legs **84** may be connected to the vertical support rods **12** and **14** by any suitable attachment means, such as, mechanical fasteners or welding, or may be integrally formed therewith.

The lower portion **82** may include a support structure connection hole **83**. In accordance with an embodiment of the present invention, the vertical support structure **10** may be pivotably attached to the tilt-resisting support hook **18** by inserting a mechanical fastener through the support structure connection hole **83**. This arrangement allows the shower caddy assembly **5** to hang vertically when mounted on shower pipes that may be oriented at different angles or when mounted at a location along the pipe that is offset from the back wall of a shower or bath enclosure against which the caddy rests. As shown in FIG. **3**, the support hook **18** may be pivotable P around an axis of rotation corresponding

to a longitudinal axis of the mechanical fastener in the support structure connection hole **83**. Alternatively, the tilt-resisting support hook **18** and the vertical support structure **10** may be fixed in relation to each other or integrally formed. The tilt-resisting support hook **18** may be made of any suitable materials, including corrosion resistant metals such as aluminum and/or stainless steel, plastic or the like.

In accordance with an embodiment of the present invention, the generally U-shaped upper pipe engaging portion **81** may include a resilient liner **87** positioned along at least a portion of an interior surface of the upper pipe engaging portion. In accordance with an embodiment of the present invention, the resilient liner **87** may be made of natural rubber, synthetic rubber, soft polymer, or the like. The resilient liner **87** may be affixed to the interior surface of the generally U-shaped upper pipe engaging portion **81** by any suitable means such as an adhesive.

In accordance with an embodiment of the present invention, the generally U-shaped upper pipe engaging portion **81** comprises at least one threaded fastener hole **86** receiving a threaded fastener **88**. As shown in FIG. **18**, each downwardly extending side leg **84** may include a threaded fastener hole **86**. In the embodiment shown, there are two threaded fastener holes **86** and associated fasteners **88**, but any other suitable number of threaded fastener holes may be used. For example, there may be zero, one, three, four or more threaded fasteners. Each threaded fastener **88** extends from the exterior side surface to an interior side surface of the downwardly extending side leg **84** to press against the shower pipe. In the embodiment shown, a threaded fastener **88** is inserted into each threaded fastener hole **86** and tightened in order to secure the tilt-resisting support hook **18** and shower caddy assembly **5** in place.

The threaded fasteners **88** may be threaded and may comprise an Allen screw, thumb screw, flat head screw, Phillips head screw, or the like. The end **89** of each threaded fastener **88** may contact the resilient liner **87** to press against the shower pipe when tightened without direct contact between the threaded fasteners **88** and the shower pipe. The resilient liner **87** is forced against the shower pipe by the threaded fastener **88** to reduce or eliminate unwanted movement of the tilt-resisting support hook **18** and the shower caddy assembly **5**. In the embodiment shown, the tilt-resisting support hook **18** comprising the resilient liner **87** and the threaded fastener holes **86** and associated fasteners **88** provide a tilt-resisting locking mechanism. In accordance with another embodiment of the present invention, the tilt-resisting support hook **18** may not include a resilient liner **87** and may instead include threaded fasteners **88** having resilient material positioned at their ends. For example, the threaded fasteners **88** may be an Allen type screw having a rubber tip on their ends that can be tightened directly against the shower pipe.

While a tilt-resisting support hook **18** is described herein, any other suitable tilt-resisting or non-tilt resisting support structure capable of supporting the caddy assembly **5** on a shower pipe may be used. Alternative tilt-resisting supports may include various types of clamps, clips and fasteners, such as disclosed in U.S. Patent Application Publication No. US2014/0224754 A1 published Aug. 14, 2014, which is incorporated herein by reference.

Whereas particular embodiments of this invention have been described above for purposes of illustration, it will be evident to those skilled in the art that numerous variations of the details of the present invention may be made without departing from the invention as defined in the appended claims.

What is claimed is:

**1**. A shower caddy assembly comprising:

a vertical support structure comprising a first and a second vertical support rod;

at least one basket coupled to the vertical support structure; and

an adjustment mechanism comprising:

a front plate having a left rear facing surface extending inwardly from an outermost left side edge, a right rear facing surface extending inwardly from an outermost right side edge, and a planar central surface parallel with the first and second vertical support rods, and first and second vertical guide channels, wherein the first vertical guide channel is between the left rear facing surface and the planar central surface, and the second vertical guide channel is between the right rear facing surface and the planar central surface;

a rear plate having a left front facing surface extending inwardly from an outermost left side edge, a right front facing surface extending inwardly from an outermost right side edge, a planar central surface parallel with the first and second vertical support rods, and first and second vertical guide channels, wherein the first vertical guide channel is between the left front facing surface and the planar central surface, and the second vertical guide channel is between the right front facing surface and the planar central surface;

and a draw fastener,

wherein the left and right rear facing surfaces of the front plate are spaced from the left and right front facing surfaces of the rear plate when the first and second support rods are clamped between the front and rear plates to thereby restrict relative vertical movement between the adjustment mechanism and the first and second vertical support rods.

**2**. The shower caddy assembly of claim **1**, wherein the planar central surface of the front plate is spaced from the planar central surface of the rear plate when the first and second support rods are clamped between the front and rear plates.

**3**. The shower caddy assembly of claim **1**, wherein the first and second vertical support rods are generally parallel to each other and spaced apart to define an opening there between.

**4**. The shower caddy assembly of claim **1**, wherein the draw fastener is threadingly engaged with the rear plate.

**5**. The shower caddy assembly of claim **1**, wherein the at least one basket comprises at least one horizontal basket support rod and when the first and second vertical support rods are clamped between the front and rear plates, the at least one horizontal basket support rod is brought into contact with the first and second vertical support rods forming at least one contact point C, and wherein the at least one contact point C prevents the left and right rear facing surfaces of the front plate from contacting the left and right front facing surfaces of the rear plate.

**6**. The shower caddy assembly of claim **1**, wherein the at least one basket comprises an upper horizontal basket support rod and a lower horizontal basket support rod and when the first and second vertical support rods are clamped between the front and rear plates, the upper and lower horizontal basket support rods are brought into contact with the first and second vertical support rods forming four contact points.

7. The shower caddy assembly of claim 6, wherein the four contact points are equally spaced from the draw fastener.

8. The shower caddy assembly of claim 1, wherein the first and second vertical guide channels of the rear plate slidably receive the first and second vertical support rods.

9. The shower caddy assembly of claim 1, wherein a radius $R_V$ of the first and second vertical guide channels of the front plate is larger than a depth $D_V$ of the first and second vertical guide channels of the front plate, and a radius $R_V$ of the first and second vertical guide channels of the rear plate is larger than a depth $D_V$ of the first and second vertical guide channels of the rear plate.

10. The shower caddy assembly of claim 1, wherein the front plate comprises at least one horizontal guide channel slidably receiving at least one horizontal basket support rod.

11. The shower caddy assembly of claim 1, wherein the at least one basket comprises an upper horizontal basket support rod and a lower horizontal basket support rod.

12. The shower caddy assembly of claim 11, wherein the front plate comprises a first horizontal guide channel slidably receiving the upper horizontal basket support rod, and a second horizontal guide channel slidably receiving the lower horizontal basket support rod.

13. The shower caddy assembly of claim 11, wherein the front plate comprises a first horizontal guide channel slidably receiving the upper horizontal basket support rod and a second horizontal guide channel slidably receiving the lower horizontal basket support rod.

14. The shower caddy assembly of claim 13, wherein the first and second horizontal guide channels have a depth Du measured in a direction perpendicular to a planar surface of the front plate of from 0.1 to 0.8 inch.

15. The shower caddy assembly of claim 14, wherein the depth $D_H$ of the first and second horizontal guide channels is from 80 to 180 percent of a diameter of the upper and lower horizontal basket support rods.

16. The shower caddy assembly of claim 1, wherein the first and second vertical guide channels of the front plate have a depth $D_V$ measured in a direction perpendicular to a planar surface of the front plate of from 0.01 to 0.5 inch and the first and second vertical guide channels of the rear plate have a depth $D'_V$ measured in a direction perpendicular to a planar surface of the rear plate of from 0.01 to 0.5 inch.

17. The shower caddy assembly of claim 6, wherein the first and second vertical support rods and the upper and lower horizontal basket support rods are clamped between the front and rear plates when the draw fastener is tightened.

18. The shower caddy assembly of claim 1, wherein the draw fastener comprises an internally threaded knob threadingly engaged with a threaded stud extending from the rear plate.

19. The shower caddy assembly of claim 1, comprising at least two of the baskets.

20. The shower caddy assembly of claim 1, further comprising a tilt-resisting support hook comprising an upper pipe engaging portion and a lower portion coupled to the vertical support structure.

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